REMARKS

Claims 2-11 and 13 are pending. The support in the originally filed specification for the amendments to the claims is found as follows: Claim 2: p.12-13; Claim 3: p.13-14; Claim 4: p.17; and Claim 5: p.18-19. No new matter is added.

The Applicant appreciates that the Examiner has indicated that claims 6 and 8-9 are allowable. All claims are clarified herein to address and overcome the cited art.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al (20040012980), hereinafter Sugiura, in view of Kido et al (20030189401), hereinafter Kido. (Office Action, page 2)

As will be shown below, the combination of Sugiura and Kido fail to suggest the invention now claimed. Structurally the invention has been clarified to distinguish over the combination of art, as will be explained herein. The references to claims and relevant figures below are to illustrate the claims with an example and not to so limit them.

Claim 2

As shown in FIG. 2, for example, the invention is characterized by:

a first electrode of an anode (1) or a cathode (2) which is an optically-transparent electrode and mounted on an optically-transparent substrate (10); and

a second electrode of said anode (1) or said cathode (2) which is a light-scattering and light-reflective electrode and mounted on emission layers.

Sugiura (US 2004/012980) discloses a transparent electrode 5, but it is not mounted on a substrate 1 (see FIGS. 1-12). That is, a reflective electrode 2 or 12 is mounted on the substrate 1. In addition, the transparent electrode 5 as the second electrode of the invention is not a light-scattering and light-reflective electrode.

Thus, Sugiura fails to teach the light scattering means of the claimed invention.

Therefore, even if a plurality of light-emissive units as taught by Kido (US 2003/189401) are combined with a luminous element as disclosed by Sugiura, the combination is still structurally different from the invention now claimed.

Claim 3

As shown in FIG. 3, for example, the invention is characterized by:

a first electrode of an anode (1) or a cathode (2) which is an optically-transparent electrode and mounted on an optically-transparent substrate (10);

emission layers (3) which are mounted on the first electrode;

a second electrode of the anode (1) or the cathode (2) which is an optically-transparent electrode and mounted on the emission layers (3); and

a light-scattering and light-reflective element (6) on the second electrode.

Sugiura as shown in FIG. 5 discloses:

a light-scattering layer 14 being mounted on a substrate 1, not an optically-transparent electrode; and

a light-scattering and light-reflective element is not mounted on a transparent electrode 5 corresponding to the second electrode of the present invention.

Thus, Sugiura fails to teach the light scattering means of the present invention.

Therefore, even if a plurality of light-emissive units as taught by Kido are applied to a luminous element as disclosed by Sugiura, the combination results in a completely different structure from the claimed invention.

Claim 4

As shown in FIG. 6, for example, the invention is characterized by:

a first electrode of an anode (1) or a cathode (2) which is a light-scattering and optically-transparent electrode (1) and mounted on an optically-transparent substrate (10); and

a second electrode of the anode (1) or the cathode (2) which is a light-reflective electrode and mounted on emission layers (3).

Sugiura as shown in FIG. 6 discloses:

a reflective electrode 2 being mounted on a substrate 1, not a light-scattering and optically-transparent electrode; and

an electrode 5 corresponding to the second electrode of the invention is just a transparent electrode, not a light-reflective electrode.

Thus, Sugiura fails to teach the light scattering means as claimed.

Therefore, even if a plurality of light-emissive unit as taught by Kido are combined with a luminous element as disclosed by Sugiura, the combination is structurally different from the invention now claimed.

Claim 5

As shown in FIG. 7, for example, the invention is characterized by:

a light-scattering and optically-transparent element (7) which is formed on an optically-transparent substrate (10);

a first electrode of an anode (1) or a cathode (2) which is an optically-transparent electrode and mounted on the element (7); and

a second electrode of the anode (1) or the cathode (2) which is a light-reflective electrode and mounted on emission layers (3).

Sugiura as shown in FIG. 6 discloses:

a reflective electrode 2 being mounted on a substrate 1 not a light-scattering and optically-transparent electrode; and

an transparent electrode 5 corresponding to the second electrode of the invention, not a light-reflective electrode.

Thus, Sugiura fails to teach the light scattering means of as claimed.

Therefore, even if a plurality of light-emissive unit as taught by Kido are applied to a luminous element as disclosed by Sugiura, the combination is completely different from the claimed invention.

In light of the different structure claimed and not suggested by Sugiura and Kido, as explained above, it is respectfully requested that the rejection be reconsidered and withdrawn.

Claims 7, 10-11 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Senbonmatsu (20030102801), Senbonmatsu hereinafter, in view of Kido et al (20030189401), hereinafter Kido. (Office Action, page 6)

As will be shown below, the combination of Senbonmatsu and Kido fail to suggest the invention now claimed. Structurally the invention has been clarified to distinguish over the combination of art, as will be explained herein. The references to the claim and a relevant figure below are to illustrate the claim with an example and not to so limit it.

Claim 7

As shown in FIG. 9, for example, the invention comprises:

both an anode (1) and a cathode (2) being formed by optically-transparent electrodes;

a first electrode of the anode (1) or the cathode (2) (in the example of FIG. 9, the anode (1)) being provided on an optically-transparent substrate (10);

emission layers (3) being provided on the first electrode,

a second electrode of the anode (1) or the cathode (2) (in the example of FIG. 9, the cathode (2)) being provided on the emission layers (3),

an optical spacer (11) being provided on the second electrode,

a light reflective element (8) being provided on the optical spacer (11),

a distance between the light reflective element (8) and the emission layers (3) being in the range of 1μm to 1mm by means of the optical spacer (11) so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced.

Thus, if the distance between the light reflective element (8) and the emission layers (3) is in the range of 1μm to 1mm by means of the optical spacer (11), the light reflective element (8) can reflect and output light from the emission layers (3) to the second electrode (cathode (2)) side from the optically-transparent substrate (10) through the optical spacer (11), the second electrode, the emission layers (3) and the first electrode without generating interference with the light from the emission layers (3) to the first electrode side (see page 22, lines 3-17 in the specification of the present application).

A lighting device of Senbonmatsu (US 2003/102801) is disclosed, for example, in Example 14 (FIG. 18) and in TABLE 5:

both an anode layer 106 and a cathode layer 115 are formed by transparent electrodes (page 8, left column, line 10 and line 21);

the anode layer 106 is provided on a first side of a substrate 102; and

an organic EL layer 110 is provided on the anode layer 106.

However, the lighting device differs significantly from the claimed invention in that:

the cathode layers 115 are discretely provided on the organic EL layer 110;

an insulating layer 108 is provided on the cathode layers 115 and the organic EL layer 110; and

entire reflecting layers 104 are discretely provided on the insulating layer 108.

First, the cathode layers 115 are provided on the organic EL layer 110 and accordingly correspond to the second electrode of the claimed invention. The insulating layer 108 is provided on the cathode layers 115, while the entire reflecting layers 104 are provided on the insulating layer 108, and accordingly the insulating layer 108 and the entire reflecting layers 104 correspond to the optical spacer and the light reflective element of the present invention, respectively.

However, Senbonmatsu fails to teach the distance, which is in the range of 1μm to 1mm, as claimed, because a distance between the entire reflecting layers 104 and the organic EL layer 110 is the thickness of the insulating layer 108, namely 100-200nm (0.1-0.2μm) and structurally defers from the distance of the present invention.

Finally, a reflecting layer 114 is provided on a second side of a substrate 102, and accordingly the entire reflecting layers 104 cannot reflect and output light from the organic EL layer 110 to the cathode layer 115 side, from the substrate 102 through the insulating layer 108, the cathode layer 115, the organic EL layer 110 and the anode layer 106, without generating interference with the light from the organic EL layer 110 to the anode layer 106.

Therefore, even if a plurality of light-emissive units as taught by Kido are applied to a lighting device as disclosed by Senbonmatsu, all possible resulting combinations are completely structurally different from the present invention.

It is respectfully requested that the rejection of claim 7 and claims dependent thereon be reconsidered and withdrawn.

Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Senbonmatsu (20030102801), Senbonmatsu hereinafter, in view of Kido et al (20030189401), hereinafter Kido, and further in view of Tyan et al (20040061136), hereinafter Tyan. (Office Action, page 12)

Claim 13 depends from Claim 7 and the showing above applies here. Tyan discloses (emphasis added):

> [0132] The OLED apparatus of this invention employs a plurality of OLED devices that use various well-known optical effects in order to enhance its properties if desired. This includes optimizing layer thickness to yield maximum light transmission, providing **dielectric** mirror structures, replacing reflective electrodes with light-absorbing electrodes, providing anti glare or anti-reflection coatings over the display, providing a polarizing medium over the display, or providing colored, neutral density, or color conversion filters over the display. Filters, polarizers, and anti-glare or anti-reflection coatings may be specifically provided over the cover or as part of the cover.

Tyan does not teach the deficiencies of the combination of Senbonmatsu and Kido as explained above. Furthermore, the combination with Tyan does not suggest,

> The organic light emitting device as set forth in claim 7, wherein the light reflective element is a multilayered film of a dielectric.

It is therefore respectfully requested that the rejection be reconsidered and withdrawn. Claim 17 has been canceled making the rejection of this claim moot.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: November 8, 2010

Respectfully submitted,

Electronic signature: /James E. Armstrong, IV/

Customer No. 21874

James E. Armstrong, IV
Registration No.: 42,266
EDWARDS ANGELL PALMER & DODGE LLP
P.O. Box 55874
Boston, Massachusetts 02205
(202) 478-7375
Attorneys/Agents For Applicant